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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/855,274	05/14/2001	C. Shane Evans	3382-55837	9164

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KLARQUIST SPARKMAN CAMPBELL LEIGH & WHINSTON LLP
121 S.W. SALMON STREET
SUITE 1600
PORTLAND, OR 97204

EXAMINER

LEWIS, DAVID LEE

ART UNIT	PAPER NUMBER
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2673

DATE MAILED: 12/31/2002

10

Please find below and/or attached an Office communication concerning this application or proceeding.

2

Office Action Summary

Application No.
09/855,274

Applicant(s)
Evans et al.

Examiner
David L. Lewis

Art Unit
2673



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Oct 22, 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Title: Application programming interface that maps input device controls to software actions.

DETAILED ACTION

Claim Rejections - 35 U.S.C. § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

2. **Claims 1, 20, and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by McCauley (6263392).**

3. **As in claim 1, McCauley teaches of a system for mapping an input device's controls with an application, comprising: a user input device having a plurality of controls, column 6 lines 22-35; an application that implements actions in response to activation of the controls of the user input device, column 8 lines 52-55; and an API that receives calls from the application, column 7 lines 34-35, the API including a call that creates an association between actions in the application and the controls**

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on the input device, **column 6 lines 1-6, column 7 line 67 to column 8 line 2**. Wherein a game player using a peripheral input device controller engages the game program of the host PC 4, via the transmission of the HID reports across the USB. The interface controller continuously monitors the USB for periodic receipt of information from the host PC. When an input device is plugged into the arcade game system, it is identified as a specific type of device (i.e. trackball), and interface system thereafter generates a trackball report which is an association between actions in the game application and the controls of the input device. This generated association report is based on the interface controller monitoring calls from the host PC, to carry out game program functions.

4. **As in claim 20, McCauley teaches of** wherein the application is a game application, **column 8 lines 51-55**.
5. **As in claim 22, McCauley teaches of** method of communicating between an input device and an application in a system, comprising: (a) issuing, from the application, a call to enumerate a suitability of input devices installed in the system, the call including an array of actions that the application uses, **column 1 lines 40-55, column 3 lines 15-20** ; (b) in response to the application call, examining the input devices installed on the system by comparing controls on the input devices with actions used by the application, **column 3 lines 1-15, column 4 lines 1-15**; © ranking the input devices based on the comparison, **column 3 lines 28-50, column 4 lines 1-15**; and (d) providing the application with

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at least the highest ranked input device that most closely matches the actions of the application, **column 9 lines 55-67**. Wherein ranking is on the basis of HID class or type of the peripheral device sensed, further wherein HID report descriptors corresponding to the device are created and transmitted to the host computer during the enumeration process cycle. A highest ranked input device is signified by the sensed and identified input device causing HID report descriptors to be produced of a particular ranked archetype when the reading of peripheral state information of certain peripheral devices by a control module, where the peripheral state information may be indicative of instantaneous input device actuation. The transmission of the HID reports across a USB allows the game player to engage a game program of the host PC, wherein an interface controller monitors the USB for periodic receipt of communication from the game program application, as found in claim 22.

6. **Claims 1-19 and 21-30 Chan et al. are rejected under 35 U.S.C. 102(e) as being anticipated by Chan et al. (5991546).**
7. **As in claim 1, Chan et al. teaches of a system for mapping an input device's controls with an application, comprising: a user input device having a plurality of controls, **column 2 lines 50-55, column 5 lines 50-65**; an application that implements actions in response to activation of the controls of the user input device, **column 1 lines 29-54, column 2 lines 1-3**; and an API that receives calls from the application, **column 5 lines 34-50**, the API including a call that creates an association**

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between actions in the application and the controls on the input device, **column 5 lines 14-20, column 3 line 55-59.**

8. **As in claim 2, Chan et al. teaches of**, wherein the application can override the association created by the API, column 6 lines 30-43. **As in claim 3, Chan et al. teaches of**, wherein an action is an application behavior resulting from a user's operation of a control, column 5 lines 15-20. **As in claim 4, Chan et al. teaches of**, wherein creating the association further includes linking a control-semantic set to an action-semantic set by way of a genre, wherein the genre is a set of actions common to applications of a similar type, column 5 lines 5-65, column 6 lines 30-45, wherein said the EEPROM 24 stores configurable parameter sets, for the keyboard, ps/2 device, and other various I/O devices, allowing the reporting capabilities of the USB interface, wherein maps of vendor specific input device codes are corresponded to HID values, which are USB standardized keycodes, having known peripheral archetype structures for specific input device types. **As in claim 5, Chan et al. teaches of**, wherein the API considers user preferences in creating the association, column 6 lines 30-45. **As in claim 6, Chan et al. teaches of**, wherein the API considers information provided from the device manufacturer in creating the association, column 6 lines 30-45. **As in claim 7, Chan et al. teaches of**, wherein the API considers similar applications that a user has configured to determine the association between an action and a given device control, column 5 lines 50-65. **As in claim**

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8, Chan et al. teaches of, wherein the API binds actions of the application to semantics in a genre by using a structure having an action value, a predefined action semantic associated with the action value, and a label for the action, column 5 lines 5-65, column 6 lines 30-45, as applied above to claim 4. **As in claim 9, Chan et al. teaches of**, wherein the application passes a structure to the API that includes an action value and an action semantic associated with the action value, column 5 lines 5-65, column 6 lines 30-45. **As in claim 10, Chan et al. teaches of**, wherein the API returns to the application an enumeration of input devices connected to the system that match the actions of the application, column 2 lines 10-16, column 5 lines 34-50, wherein as well known and provided by the USB Specification, the USB hub dynamically identifies (plug and play) input devices attached to its port whereby the system software must accommodate dynamic changes in the physical bus topology. **As in claim 11, Chan et al. teaches of**, wherein in response to an application call, the API examines all input devices connected to the system and invokes an application-defined callback function to enumerate the connected devices that match the application actions, column 2 lines 10-16, column 5 lines 34-50. **As in claim 12, Chan et al. teaches of**, wherein the application receives its own application codes as incoming input device data, column 5 lines 34-50. **As in claim 13, Chan et al. teaches of**, wherein the API ranks input devices based on suitability of actions of the application, column 2 lines 10-17, column 5 lines 34-50, wherein the USB standard allows for plug and play dynamic connections, wherein the USB hub registers each connected device and provides a unique address for the device, ranking the device according to function. **As in claim 14, Chan et al.**

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teaches of, further including an API call to display a default input device configuration, column 3 lines 55-60, column 6 lines 30-45. **As in claim 15, Chan et al. teaches of**, further including automatically obtaining system information about input devices connected in the system, retrieving custom settings provided by the user, and rendering the user interface for input devices using system information and custom settings, column 2 lines 10-17, column 3 lines 55-60, column 6 lines 20-45. **As in claim 16, Chan et al. teaches of** further including building an action map, column 5 lines 14-20. **As in claim 17, Chan et al. teaches of** further including setting the action map after it is built, column 6 lines 30-45. **As in claim 18, Chan et al. teaches of**, wherein setting the action map includes mapping physical controller codes of the input device to physical application codes, column 5 lines 14-20. **As in claim 19, Chan et al. teaches of** wherein building an action map includes obtaining information about user preferences and hardware manufacturer defaults to create the association between actions and device controls, column 6 lines 30-45. **As in claim 21, Chan et al. teaches of** wherein the input device includes a mouse, keyboard, game controller, force feedback device, or combinations thereof, column 6 lines 50-65.

9. **As in claim 22, Chan et al. teaches of** method of communicating between an input device and an application in a system, comprising: (a) issuing, from the application, a call to enumerate a suitability of input devices installed in the system, the call including an array of actions that the application uses, **column 5 lines 34-50**; (b) in response to the application call, examining the input devices installed

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on the system by comparing controls on the input devices with actions used by the **application**, **column 5 lines 34-50**; © ranking the input devices based on the comparison, **column 3 lines 20-30**; and (d) providing the application with at least the highest ranked input device that most closely matches the actions of the application, **column 3 lines 55-67**. Wherein the serial EEPROM not only maps input data to HID data based on a priority of input device signal activation, it also operates to exchange information from the input device to the host with a unique handshake protocol which prevents conflicts when accessing the EEPROM for other input device information or the like. Each input device, is ranked with a unique address according to the USB standard, and further priority ranked according to a first to be activated, first to be processed system via the serial EEPROM.

10. **As in claim 23, Chan et al. teaches of**, wherein the input device received by the application is advisory and the application selects the desired input device, column 5 lines 34-50. **As in claim 24, Chan et al. teaches of**, further including building an action map that includes a mapping of actions to controls for a selected device, column 3 lines 23-27, 55-60. **As in claim 25, Chan et al. teaches of**, further including setting the action map, column 6 lines 30-45. **As in claim 26, Chan et al. teaches of**, further includes configuring the user interface, column 6 lines 30-45. **As in claim 29, Chan et al. teaches of** further including, in response to a request from the application, enumerating input devices attached to the system that are most suitable to the application, column 2 lines 5-18, column 5 lines 34-64, wherein the said feature is inherent to the USB plug and play standard, in

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conjunction with said serial EEPROM, wherein requests are made to the input devices, which respond to the requests with device reports depending which device is suitable to transmit said device reports.

11. **As in claim 27, Chan et al. teaches of** method for mapping an input device's controls with an application in a system, comprising: in response to a request from an application program to create an action-to-control mapping, **column 5 lines 14-50**, reading stored user preferences for the action-to-control mapping and reading a stored default file that includes manufacture provided defaults for the action-to-control mapping, **column 6 line 30-45**; reading a structure that includes action values and action semantics associated with the action values, the action values being defined by the application, **column 3 lines 55-65, column 5 lines 14-21**, and using the stored user preferences and the stored default file to create an association between the action values associated with the application and the controls on the input device, **column 6 lines 30-45**. **As in claim 28, Chan et al. teaches of** wherein the creating includes creating a control-to-action map and further including setting the action map to allow the application to receive data from the input device, **column 5 lines 34-64, column 6 lines 30-45**.
12. **As in claim 30, Chan et al. teaches of** a computer-readable medium including computer-executable instructions to perform a method for using a computer input device with a software application, **column 3 lines 15-30**, comprising: an API, responsive to a call from an application, that returns an

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enumeration of input devices that substantially match the actions of the application, **column 5 lines 35-65**; and an API, responsive to a call from the application, that uses one of the enumerated input devices selected by the application to build an action-to-control mapping, **column 5 lines 5-21**.

Claim Rejections - 35 U.S.C. § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
14. **Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over McCauley (6263392) in view of Chan et al. (5991546).**
15. **As in claim 27, McCauley teaches of method for mapping an input device's controls with an application in a system, comprising: in response to a request from an application program to create an action-to-control mapping, **column 3 lines 1-15, column 8 lines 53-55**; reading a structure that includes action values and action semantics associated with the action values, the action values being defined by the application, **column 4 lines 1-15, column 3 lines 28-50**. Wherein an interpretive**

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software module of the host computer system software contains and uses a library of pre-defined peripheral device archetypes, data structure building rules and signal handling protocols, which serve to map an input device control manipulation signal to a HID report descriptor communicated to a game application. **However McCauley is silent as to** reading stored user preferences for the action-to-control mapping and reading a stored default file that includes manufacture provided defaults for the action-to-control mapping, and using the stored user preferences and the stored default file to create an association between the action values associated with the application and the controls on the input device. **Chan et al. teaches of** reading stored user preferences for the action-to-control mapping and reading a stored default file that includes manufacture provided defaults for the action-to-control mapping, **column 6 lines 30-45**, and using the stored user preferences and the stored default file to create an association between the action values associated with the application and the controls on the input device, **column 3 lines 17-30, 55-60**. Wherein Chan et al. teaches of what McCauley is silent on, in a system and method of interfacing peripheral devices to a computer universal serial bus. **Therefore it would have been obvious** to the skilled artisan at the time of the invention to utilize with the device as taught by McCauley, stored user preferences for the action-to-control mapping and reading a stored default file that includes manufacture provided defaults for the action-to-control mapping, and using the stored user preferences and the stored default file to create an association between the action values associated with the application and the controls on the input device, as suggested by Chan et al., because Chan

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et al. suggests user preferences would be useful in a system as designed by McCauley with the intent of interfacing peripheral devices to a computer universal serial bus, as found in claim 27.

Response to Arguments

16. Applicant's arguments filed 10/22/2002 have been fully considered but they are not persuasive.
17. A broad interpretation of McCauley et al. teaches of said API call to create said association. Wherein a game player using a peripheral input device controller engages the game program of the host PC 4, via the transmission of the HID reports across the USB. The interface controller continuously monitors the USB for periodic receipt of information from the host PC as defined by the game program being executed on the host PC. When an input device is plugged into the arcade game system, it is identified as a specific type of device (i.e. trackball), and the interface system thereafter generates a trackball report which is an association between actions in the game application and the controls of the input device. This generated association report is based on the interface controller monitoring calls from the host PC as defined by the game program being executed on the host PC, to carry out game program functions. The user inputs are provided to applications executing on the host PC as provided by calls of the application as well known. Given the USB architecture structured

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for use with the HID, said mapped associations and application calls are built into the system as described above and broadly interpreted by McCauley et al..

18. A broad interpretation of Chan et al. teaches of said API call to create said association. Chan explicitly teaches programs inherently call for the key combinations, wherein generation of meaningful data for transmission to a processor can require processing to determine the command selected by the operator. The serial EEPROM is accessed to map the sensed key locations for one or more keys into the HID value that is to be transmitted to the USB. Wherein a host processing capability waits for device data requests from the host, and upon receipt of a request, determines whether the request is made to the keyboard and responds with a report. The User inputs are provided to applications executing on the host PC as well known. The host waits for device data requests defined by the application being executed on the host. The EEPROM accessed to map the sensed key locations also stores user customized information. Therefore when the programs inherently call for the input key combinations, it uses the association between actions in the application and the input key combinations, as detailed by the information stored in the EEPROM.
19. Further Kou, cited but not used in the rejection, teaches of an similar systems to both McCauley and Chan, wherein similarly it is directed towards a Universal Serial Bus system for facilitating communication between a Host Unit and HID. Wherein Kou teaches of said application program

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interface, API, column 6 lines 55-67, and an application making a call to said interface for the purpose of facilitating communication between a Host and the HID. The system is of the plug and play type which creates HID associations when the device is detected after being connected to the system and input is given by the user. Kou provides what is know in the art on systems taught by both McCauley and Chan, supporting the statements of inherentcy made by Chan.

20. Rejection maintained for the above reasons.

Conclusion

21. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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Applicant: Evans

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22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **David L. Lewis** whose telephone number is **(703) 306-3026**. The examiner can normally be reached on MT and THF from 8 to 5. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala, can be reached on (703) 305-4938. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Any response to this action should be mailed to:

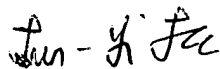
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Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.


Lun-Yi Lao
Primary Examiner